Instruction Manual
P1886E/EN
2010-12

Cleco®

120PTHD…

Pulse shut-off nutsetter

For additional product information visit our website at http://www.apextoolgroup.com

Notes on this instruction manual

The instruction manual has the following purposes:

- It provides important instructions for safe and effective operation.
- It describes the function and operation of the pulse shut-off nutsetter.
- It serves as a reference work for technical data, service intervals and spare part orders.
- It points out options.

In the text:

120PTHD…	stands for all of the designs of the pulse shut-off nutsetter described here.
➔	Identifies instructions to be followed.
•	Identifies enumerations.
<…>	Identifies an index number, see 8 Spare parts, page 25

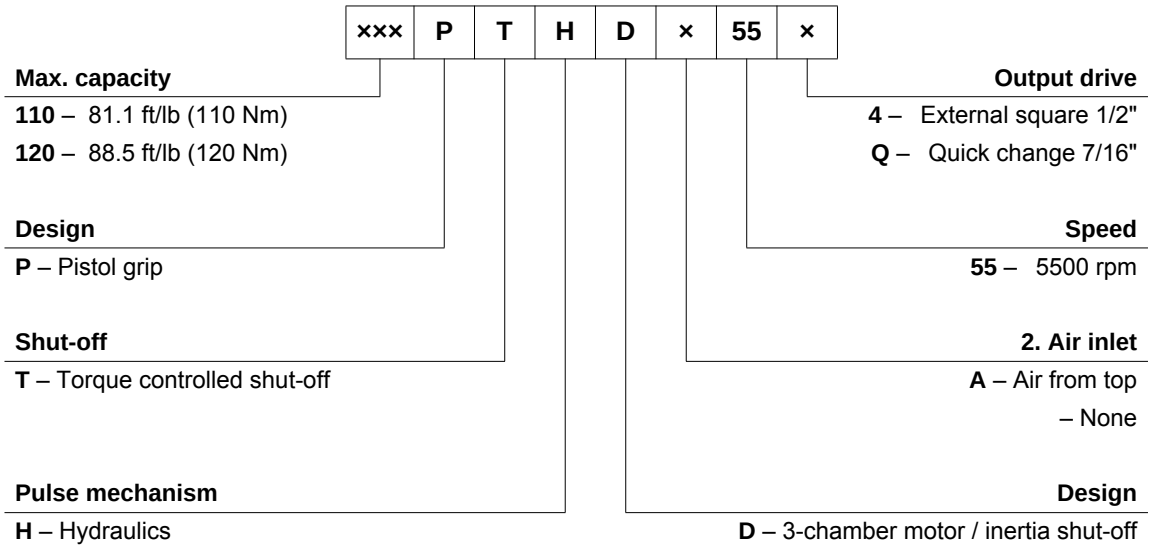
In graphics:

⟵	Identifies movement in a direction.
⇩	Identifies function and force.

In pictured illustrations:

Where not necessary, 120PTHD… (air from buttom) is shown.

Nomenclature



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Contents

1 Safety 5

1.1 Warnings and notes ... 5
1.2 Basic requirements for safe working practices ... 6
1.3 Operator training ... 6
1.4 Personal protective equipment ... 7
1.5 Designated use ... 7
1.6 Noise and vibration ... 7

2 Items supplied 7

3 Product description 8

3.1 Operation and functional elements ... 8

4 Before initial operation 9

4.1 Ambient conditions ... 9
4.2 Air supply ... 9
4.3 Changing air inlet: top / buttom (120PTHDA only) ... 9
4.4 Connect the tool ... 9
4.5 Setting up the tool ... 10

5 Troubleshooting 12

6 Maintenance 13

6.1 Service schedule ... 13
6.2 Activating the reserve oil ... 15
6.3 Refilling oil ... 16

7 Repair instructions 19

7.1 Disassembling the motor unit ... 19
7.2 Disassembling the throttle valve ... 19
7.3 Disassembling the pulse unit ... 20
7.4 Assembling the motor unit ... 20
7.5 Assembling the pulse unit ... 24

8 Spare parts 25

8.1 Pistol grip 120PTHD… ... 26
8.2 Pistol grip 120PTHDA… ... 28
8.3 Motor unit 935657 ... 30

8.4 Pulse unit 32
8.5 Equipment order list 34

9 Technical data 35

9.1 Dimensions 120PTHD… in mm 35
9.2 Dimensions 120PTHDA… in mm 36
9.3 Performance Data 36

10 Service 37

11 Disposal 37

1 Safety

1.1 Warnings and notes

Warning notes are identified by a signal word and a pictogram:

- The signal word describes the severity and the probability of the impending danger.
- The pictogram describes the type of danger.

WARNING!

Indicates a potentially hazardous situation
which, if not avoided, could result in death or serious injury.

CAUTION!

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or property and environmental damage. If this warning is not observed, injuries, property or environmental damage may occur.

NOTE

General notes
include application tips and particularly useful information but no hazard warnings.

1.2 Basic requirements for safe working practices

You should read all instructions.
Failure to observe the instructions listed below can result in serious injuries.

CAUTION!

- ➔ Before initial operation, check that the suspension bail is properly fastened to the balancer.
- ➔ Work with a maximum working pressure of 101.5 psi (700 kPa) (measured as the air inlet tube of the tool).
- ➔ 120PTHDA: When air inlet from top is used make sure, that plug is properly mounted accordingly.

- ➔ If you hear unusual noises or vibrations, switch off the tool immediately.
  Shut off the air supply immediately.
- ➔ Before carrying out repairs, adjusting the torque or replacing screw bits, disconnect the tool from the compressed air line.
- ➔ The compressed air line must be depressurized before disconnecting it.
- ➔ Never use the air hose to hold, raise or lower the tool.
- ➔ Air hoses, the suspension bail and fittings must be regularly checked for damage and wear. Replace if necessary.

- ➔ Always carry out assembly according to Chapter 8 Spare parts, page 25.
- ➔ Use only accessory parts authorized by Cleco
  (see product catalog).
- ➔ Adjust the torque using the provided hex wrench only. Never use an angular wrench.
- ➔ Only use screw inserts for machine-controlled fastening tools.
- ➔ Make sure that the screw bits are securely inserted.
- ➔ Inspect screw bits for visible damage and cracks.
  Replace damaged screw bits immediately.

- ➔ The operation, maintenance and repair conditions set forth in the operating instructions must be observed.
- ➔ Follow generally valid and local safety and accident prevention rules.

1.3 Operator training

Operators must be trained in correct handling of the tool. The user must make the operating manual available to the machine operator and ensure that the operator has read and understood it. The tool may be connected, used, serviced and repaired by qualified persons only. The tool may be repaired by authorized technicians only.

1.4 Personal protective equipment

- Wear the protective goggles to protect against sprays of metal splinters and fluids.
- Wear gloves to protect against skin irritation in case of direct contact with oil.

Danger of injury by being wrapped up in and caught by machinery

- Wear a hairnet.
- Wear close-fitting clothing.
- Do not wear jewelry.

Sound level in the area of the user > 80 dB(A), danger of hearing damage

- Wear hearing protection.

1.5 Designated use

The 120PTHD… is designed exclusively for fastening and releasing threaded fasteners.

- Do not use it as a hammer.
- Do not open it or modify it structurally.
- Do not use it in areas where there is a risk of explosion.

1.6 Noise and vibration

Sound pressure level Lp gemäß DIN EN ISO 15744

Free speed for n ≤ 5500 rpm	< 80 dB(A)

Vibration values according to DIN EN ISO 20643

Free speed: ahv for n ≤5500 rpm	< 6.56 ft/s² (2.0 m/s²)
Load: ahv 120PTHD…	< 14.76 ft/s² (4.5 m/s²)
Load: ahv 120PTHDA…	< 16.40 ft/s² (5.0 m/s²)
Load: ahv 120PTHDA… + absorber (option on request)	< 8.20 ft/s² (2.5 m/s²)

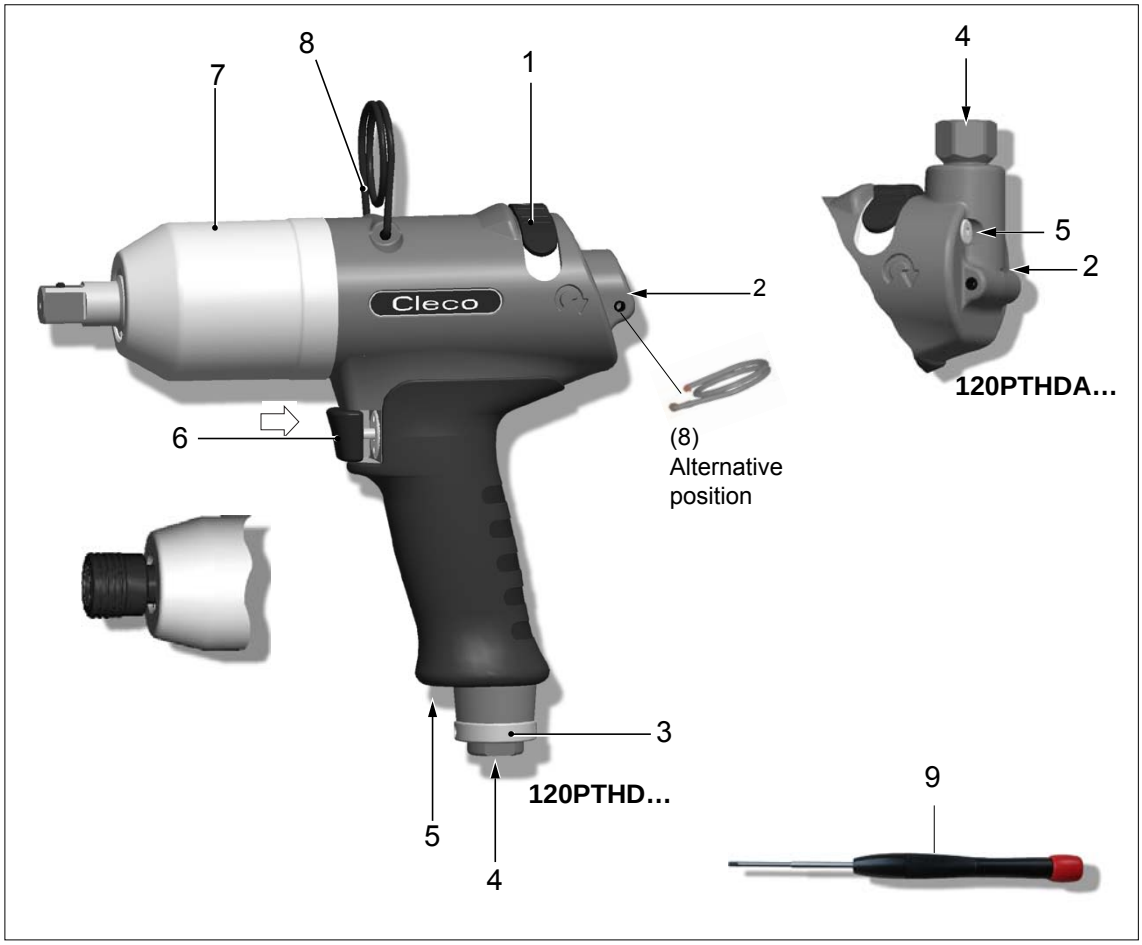
2 Items supplied

Check shipment for transit damage and ensure that all items have been supplied:

1 120PTHD…
1 This instruction manual
1 Declaration of Conformity
1 Size 2 hex wrench

3 Product description

3.1 Operation and functional elements



Item	Designation
1	Reverse switch
2	Torque adjustment, see 4.5.1 Setting the torque, page 10
3	Speed adjustment, see 4.5.2 Changing the speed, page 11
4	Air inlet
5	Connection for Pneumatic Torque Verifier TVP100, signal connection kit, order no. 934918 (optional)
6	Start button
7	Reserve oil adjustment, see 6.2 Activating the reserve oil, page 15
8	Suspension bail
9	Size 2 hex wrench, order no. 935490

4 Before initial operation

4.1 Ambient conditions

Ambient temperature	41 °F (5 °C) to a maximum of +104 °F (+40 °C)
Permissible relative humidity	25 to 90 %, non-condensing

4.2 Air supply

Parameter	Data
Air hose	Inner diameter 1/2" (ø 12,5 mm), maximum length 16.4 ft (5 m)
Working pressure range	58 to 101.5 psi (400 to 700 kPa) Recommended: 90 psi (620 kPa)
Compressed air	Air quality according to ISO 8573-1, quality class 2.4.3 The compressed air must be clean and dry.

NOTE

To attain consistent results, maintain a constant working pressure using a 1/2" service unit consisting of filter, pressure regulator and lubricator.

- ➔ The inside of the air hose must be free of residue; clean it if necessary.
- ➔ Spray a few drops of light oil into the air inlet tube.

Oils according to DIN 51524 / ISO 3498

Order no.	Packaging unit liter	Designation	ARAL	BP	elf	ESSO	INA	Mobil	Klüber	SHELL
933090	2	HL32	Aralub EE 100	Energol HL 32	Polyelis 32 Olna 32	Nuto H 32	Hydraol A 32	D.T.E.Oil Light Vactra Oil Light	Crukolan 32	Molina 32 Molina 22

4.3 Changing air inlet: top / buttom (120PTHDA only)

At delivery the air inlet at the buttom is sealed with a screwed plug. If a change is required, change following:

- ➔ Remove air strainer from the top (and store it). See demand 8.2 Pistol grip 120PTHDA…, page 28, see detail X.
- ➔ Remove screwed plug from the buttom, thereby arresting A/F 17.
- ➔ Screw screwed plug into air inlet at the top.

4.4 Connect the tool.

CAUTION!

The air hose can come off by itself and whip around uncontrollably.

- ➔ Shut off the compressed air before making the connection.

- ➔ Connect the connection couplings to the tool and compressed air line properly.

➔ Activate the compressed air.

4.4.1 Testing

	➔ Carry out a test in clockwise and counterclockwise rotation at maximum speed, see 4.5.2 Changing the speed, page 11. ➔ Check the speed at the output drive. Target: n = 5500 ±300 rpm.

4.5 Setting up the tool

The tool must be configured for the desired rundown.

4.5.1 Setting the torque

CAUTION!

Danger of injury from unintended startup.
Shut off the compressed air before adjusting the torque.

CAUTION!

Danger of injury from rotating hex wrench
Adjust the torque using the provided hex wrench only. Never use an angular wrench.

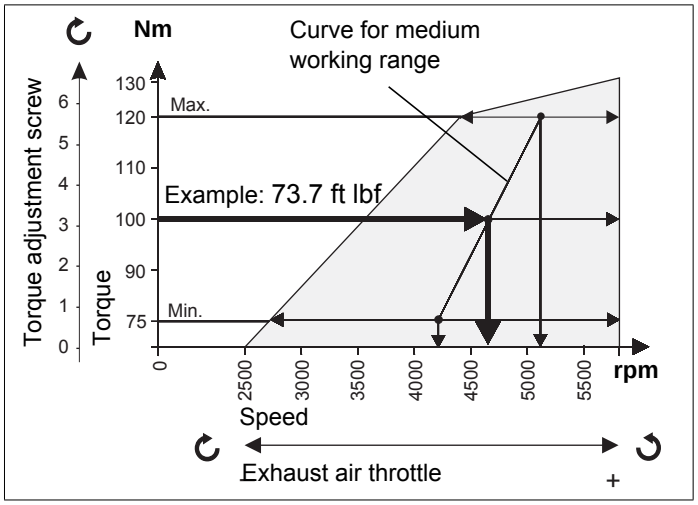
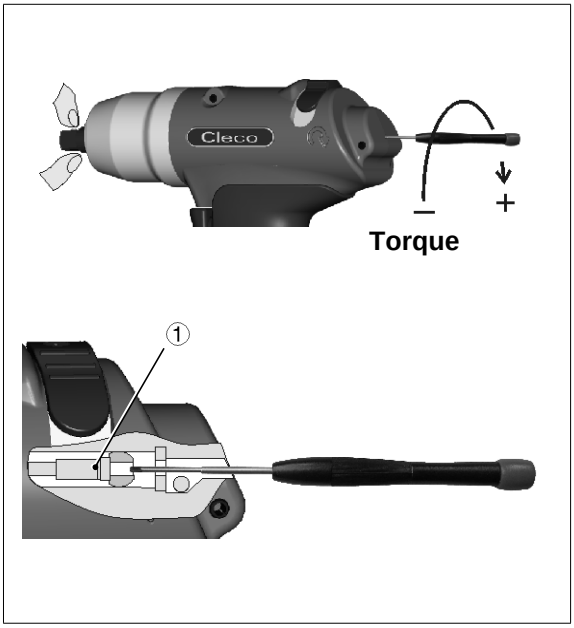


Fig. 4-1

Example settings:
73.7 ft lbf (100 Nm) rundown

➔ Approx. 3 turns of the torque adjustment screw
Speed: 4600 rpm

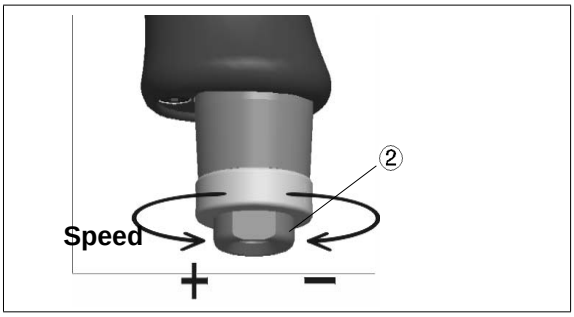


1. Hold the output drive firmly.
2. Carefully push the size 2 hex wrench through the hole of the pistol grip housing until it reaches the torque adjustment screw ①.
3. Turn the torque adjustment screw and roughly set the required torque, see Fig. 4-1 , page 10. Total number of turns = 6.
4. Pull out the hex wrench. The hole closes automatically when the tool starts.
5. Carry out the rundown.
6. Check the shut-off mechanism worked properly, see 4.5.3 Measuring the torque, page 12.
7. In case of deviations, correct the torque setting
8. Repeat the rundown.

Fig. 4-2

4.5.2 Changing the speed

Requirement	Measure
Better shut-off accuracy – particularly for hard joints. Increase the number of pulses per rundown. Recommended number of pulses ≥ 6.	➔ Reduce the speed
Reducing the noise pressure level	➔ Reduce the speed
Reducing vibration	➔ Reduce the speed
Shortening the rundown time, particularly for soft joints.	➔ Increase the speed



1. Unscrew the threaded pin using the size 2 hex wrench.
2. To reduce the speed, turn the exhaust air throttle ② clockwise.
3. To increase the speed, turn the exhaust air throttle ② counterclockwise.

Fig. 4-3

NOTE

A speed change may be carried out while the compressed air is activated.
After changing the speed, correct the torque if necessary;
see 4.5.1 Setting the torque, page 10.

4.5.3 Measuring the torque

We recommend carrying out a static torque measurement by retightening the rundown.
When carrying out a dynamic measurement using a transducer adapter, also carry out a static test, for example using a torque wrench (electronic).

5 Troubleshooting

Error	Possible causes	Measures and remedies
Tool does not shut off	Torque set too high	➔ Reduce the torque setting, see 4.5.1 Setting the torque, page 10.
	Speed set too low	➔ Increase the speed, see 4.5.2 Changing the speed, page 11.
	Working pressure < 58 psi (400 kPa)	➔ Check the cross section of the hose and coupling: Inner diameter 1/2" (ø 12,5 mm), maximum length 16.4 ft (5 m). ➔ Increase the working pressure.
	Reverse button is not at the detent	➔ Turn the reverse button to the detent.
	Excessive transmission damping due to extension and worn socket	➔ Increase the speed, see 4.5.2 Changing the speed, page 11. ➔ Use a shorter or more rigid extension. ➔ Replace the socket.
	Insufficient oil in the pulse unit (no pulse build-up)	➔ See 6.2 Activating the reserve oil, page 15. ➔ See 6.2 Activating the reserve oil, page 15.
	Screen in the air inlet tube / muffler is dirty	➔ Clean or replace parts.
Insufficient shut-off accuracy	Number of pulses too low: < 6	➔ Reduce speed, number of pulses > 6.
	Adapter parts	➔ Replace adapter parts. ➔ Use extension and socket with guide diameter.
	Pressure fluctuations in the air network	➔ Use a pressure controller.
Fastening time too long: > 4 seconds	Joint too soft; self-locking nuts, drive screws	➔ Increase the speed. ➔ Use a pulse nutsetter with a higher capacity. ➔ Use a mechanical screwdriver.

6 Maintenance

CAUTION!

Danger of injury due to unintentional activation
– before service, disconnect the tool from the compressed air supply.

6.1 Service schedule

Regular maintenance reduces operating faults, repair costs and downtime.

Maintenance interval	Rundowns	Measures
W1	100,000	➔ Check the suspension bail for functional safety. ➔ Check the air hose for wear. ➔ Check the square on the output drive for wear. ➔ Check the air inlet for tight fit. ➔ Check the housing of the pulse unit for tight fit. ➔ Check the max. free speed.
W2	500,000	➔ Oil change, see 6.3 Refilling oil, page 16. ➔ Motor service kit, see 3) Part of motor service kit K1, order no. 935653, page 27. ➔ Hydraulic service kit, see 3) Part of hydraulic service kit K2, order no. 935654, page 33. ➔ Replace muffler, filter.
W3	1,000,000	Check individual parts and replace if necessary. ➔ Suspension bail ➔ Throttle valve ➔ Exhaust air throttle ➔ Motor ➔ Pulse unit

This maintenance schedule uses values that are valid for most applications. For a specific service interval, see 6.1.1 Calculating a customer-specific maintenance plan, page 14.

Implement a safety-related maintenance program that takes the local regulations for repair and maintenance for all operating phases of the tool into account.

6.1.1 Calculating a customer-specific maintenance plan

A service interval **W(1,2,3)** depends on the following factors:

Factor	Value assumed in 6.1, "Maintenance plan"	Description
V	V1 = 100,000 V2 = 500,000 V3 = 1,000,000	Number of rundowns after a maintenance measure is prescribed by Cleco.
T1	1.8 seconds	Specific rundown time, measured in life and endurance tests.
T2	2 seconds	Actual rundown time, depending on the hardness of the joint.
S	1; 2; 3	Number of shifts per day.
VS	750	Number of rundowns per shift.

T2, **S** and **VS** are variable factors and can differ depending on the specific application.

Example for service interval W2:

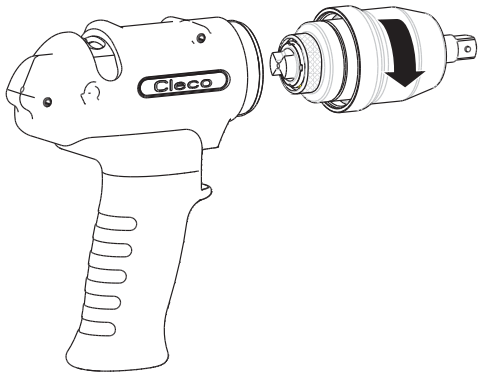
After 500,000 rundowns (V),
a specific rundown time of 1.8 seconds (T1)
with an actual fastening time of 3 seconds (soft joint) and
3 completed shifts per day and 750 rundowns per shift:

$$W(1,2,3) = \frac{V \times T_1}{T_2 \times S \times VS} \qquad W2 = \frac{500000 \times 1,8}{3 \times 3 \times 750} = 133(\text{days})$$

You have to carry out the maintenance measures marked W2 after an operating time of 133 days.

6.2 Activating the reserve oil

If pulse build-up stops, some of the oil in the pulse unit has been used up. The reserve oil must be activated. If the equalizing piston reaches the limit stop, oil must be refilled the next time (see 6.3 Refilling oil, page 16).



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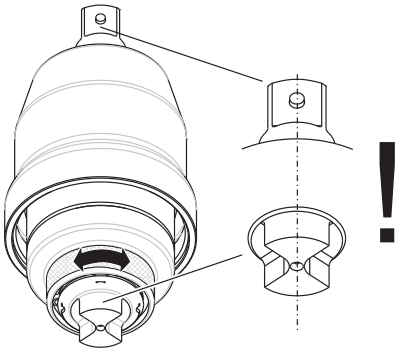
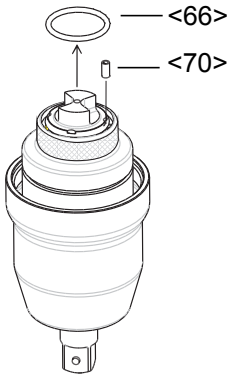


2. Align both ends as shown in the illustration.



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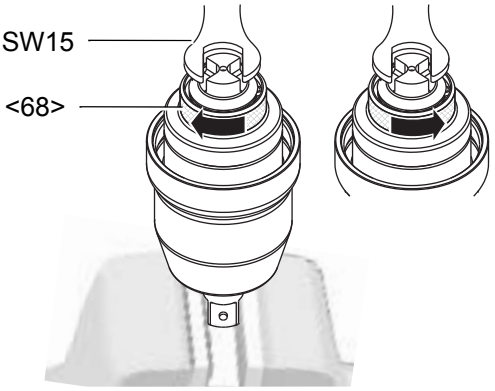
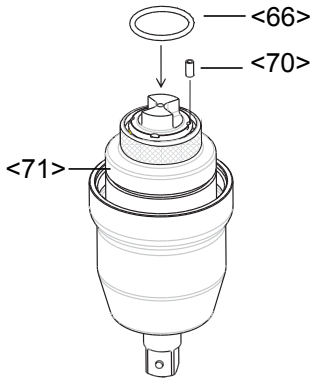


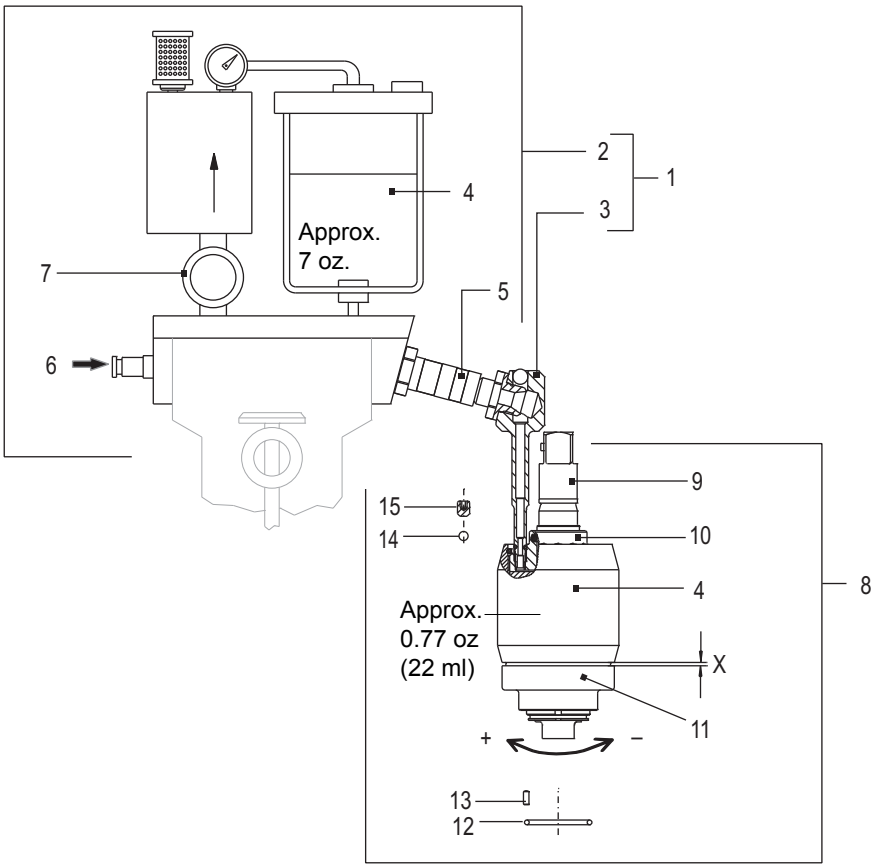
4. Turn <68> clockwise till the detent.
5. Turn <68> approx. 2,5 turns anticlockwise…



6. …until <70> can be reinserted again.

The reserve oil can be adjusted approx. 1 – 2 times until <71> is at the detent and <70> can still be reinserted.
If necessary, turn back to the next groove.

6.3 Refilling oil



Item	Designation
1	Oil filling device asm.[1)]
2	Oil filling device without filling piece [1)]
3	Filling piece asm.[1)]
4	Oil order no. 925715, ESSO-UNIVIS HVI26, approx. 2.1 qt (2 liters), temperature 68 ±9 °F (20 ±5 °C)
5	Quick disconnect coupling
6	Working pressure 65 – 80 psi (450 – 550 kPa)
7	Shut-off valve
8	Pulse unit
9	Hydraulic rotor
10	Bearing ring
11	Equalizing piston
12	O-ring
13	Sleeve
14	Ball
15	Threaded pin

1) See 8.5 Equipment order list, page 34

1. Remove the threaded pin **15** and ball **14**.
2. Remove the O-ring **12** and sleeve **13**.
3. Align the output drive and claw as shown in the illustration, see 6.2 Activating the reserve oil, page 15.
4. Rotate the equalizing piston **11** clockwise as far as it will go until **X** = 0 (starting point).
5. Unscrew the equalizing piston **11** counterclockwise by 1,0 turns (reserve oil volume).
6. Connect the pulse unit **8** to the quick disconnect coupling **5** using the adapter.
7. Close the shut-off valve **7**.
8. Set the working pressure to approx. 73 psi (500 kPa).
9. Slowly open the shut-off valve **7** all the way until the gauge shows a negative pressure of –13 psi (–90 kPa).
10. Wait approx. 2 minutes until the number of vacuum bubbles has reduced significantly.
11. Close the shut-off valve **7** slowly. The gauge shows atmospheric pressure again. Missing oil is pushed into the pulse unit **8** .
12. Repeat steps 8 through 11 if necessary until the number of bubbles approaches zero.
13. Uncouple pulse unit **8**, unscrew the adapter and add a couple of drops of oil using the injector.
14. Mount the ball **14** and screw the threaded pin **15** into place (0.75+0.25 ft lbf, or 1 +0.3 Nm).
15. Turn the equalizing piston **11** another 2,5 turns counterclockwise, or slightly more if necessary, until the sleeve **13** can be inserted (oil compensation volume).
16. Install the sleeve **13** and O-ring **12**.

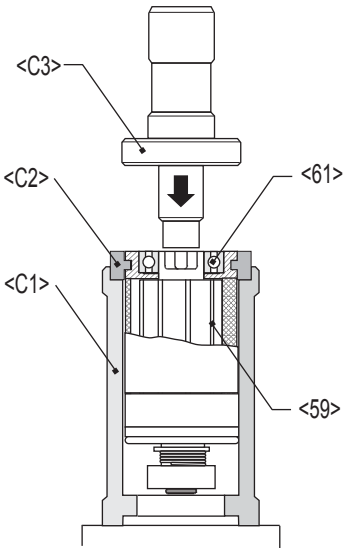
NOTE

Small air bubbles that become visible due to the high pressure during filling do not mean that the pulse unit is leaking.
The filling process is not impaired.

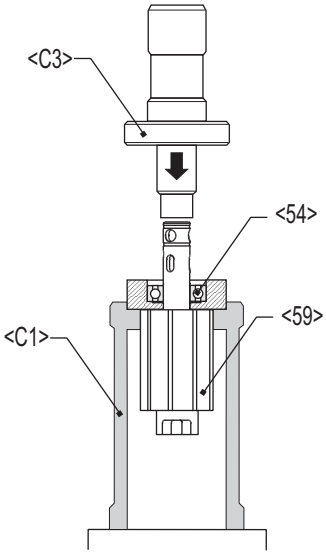
7 Repair instructions

Refer also to 8 Spare parts, page 25 and 8.5 Equipment order list, page 34

7.1 Disassembling the motor unit

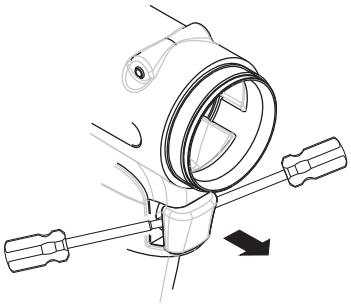


Changing blades



Changing bearing / rotor

7.2 Disassembling the throttle valve



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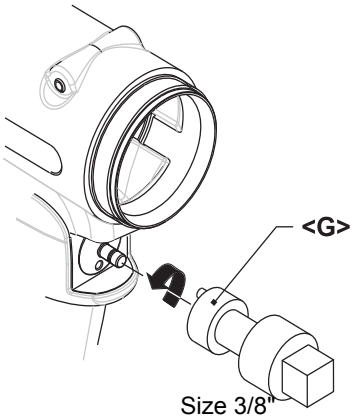

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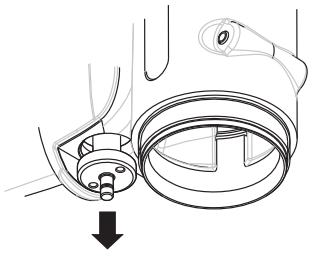


3.

7.3 Disassembling the pulse unit

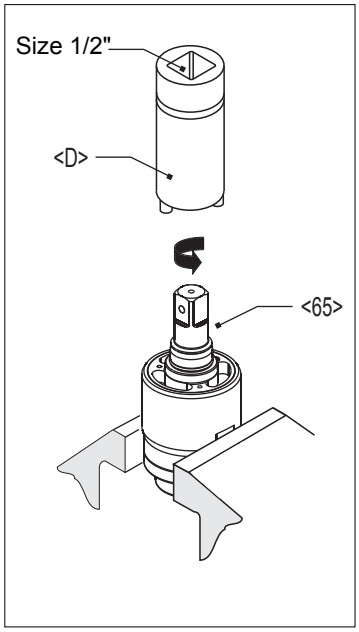


Fig. 7-1

CAUTION!

Skin irritation in case of direct contact with oil.
Wear protective gloves.

CAUTION!

Hydraulic blade is under spring pressure!
Wear protective goggles.

NOTE

Permitted only if filling is guaranteed with oil filling device, see 6.3 Refilling oil, page 16. The pulse unit must have cooled to room temperature.

7.4 Assembling the motor unit

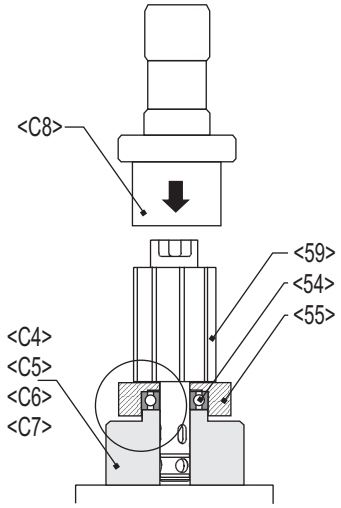
CAUTION!

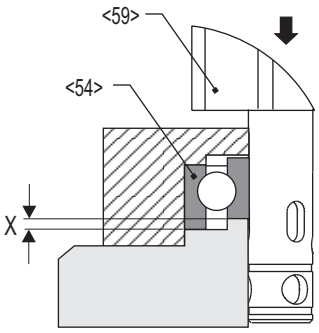
- Always carry out assembly according to the exploded drawing, see 8 Spare parts, page 25. Incorrect assembly causes uncontrollable reactions, such as unexpected startup or ejection of parts.
- Tighten all screwed joints of the tool carefully, according to the specifications.

NOTE

To prevent damage, lubricate the gaskets and O-rings using grease (order no. 914392) before assembly.

7.4.1 Assembling the end plate

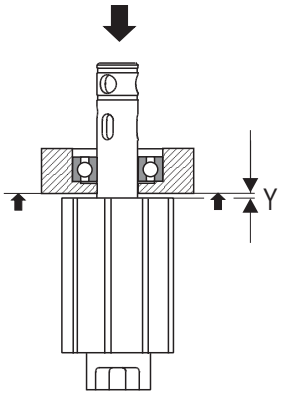


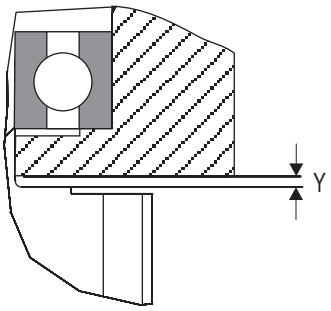


Dimension X = 0.00" to 0.00236"
(0.00 to 0.06 mm)

1. Press in <59>, see dimension X.

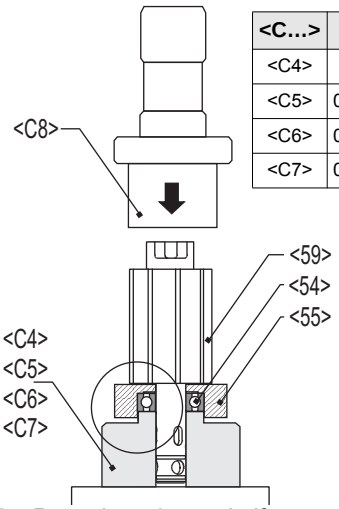
Test force
1.12 – 3.37 lbf (5 – 15 N)





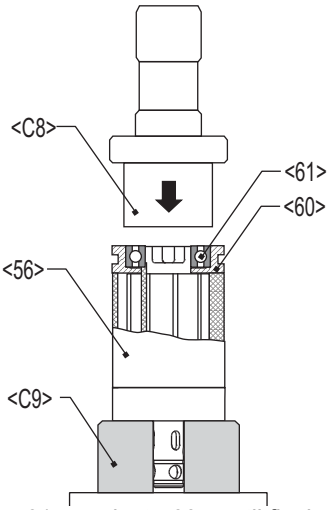
Dimension Y = 0.0002" to 0.0006"
(0.005 to 0.015 mm)

2. Check dimension Y.



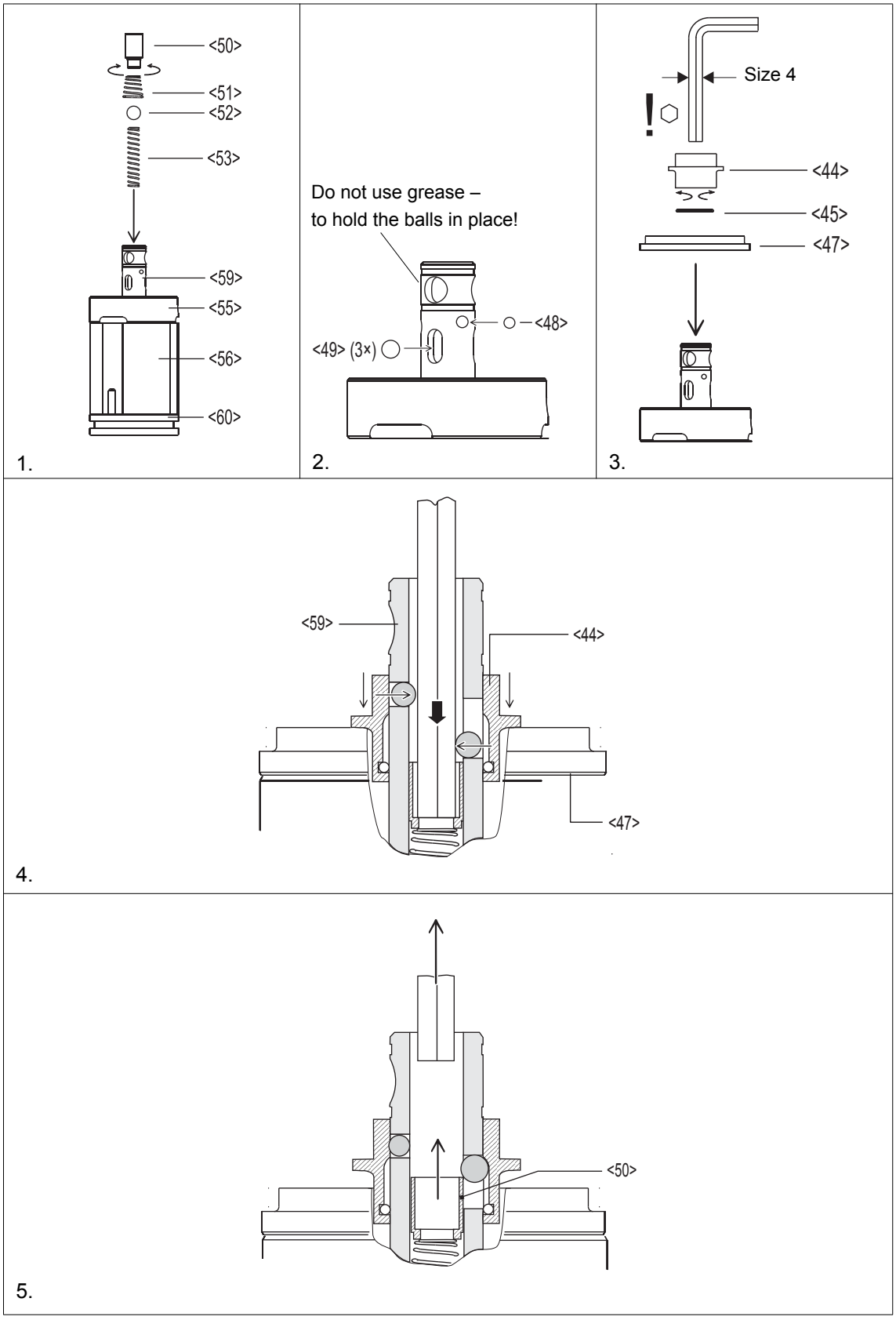
<C…>	Dimension X
<C4>	0.00
<C5>	0.00079" (0.02 mm)
<C6>	0.00158" (0.04 mm)
<C7>	0.00236" (0.06 mm)

3. Press in <59> again if nec., see dimension X.

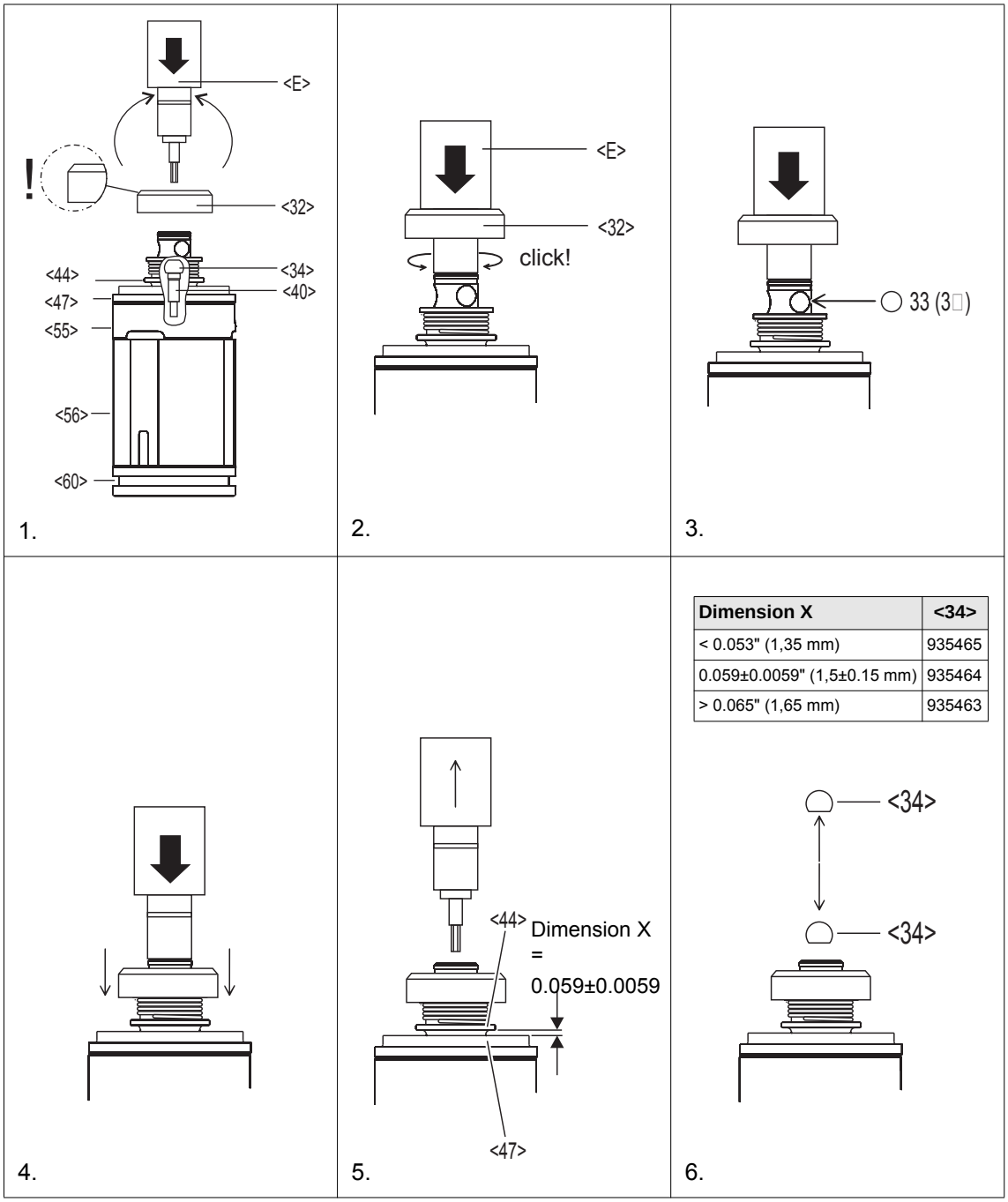


4. Press <61> against <60> until flush.

7.4.2 Assembling the shut-off piston



7.4.3 Assembling the actuating ring



1.

2.

3.

Dimension X	<34>
< 0.053" (1,35 mm)	935465
0.059±0.0059" (1,5±0.15 mm)	935464
> 0.065" (1,65 mm)	935463

4.

5.

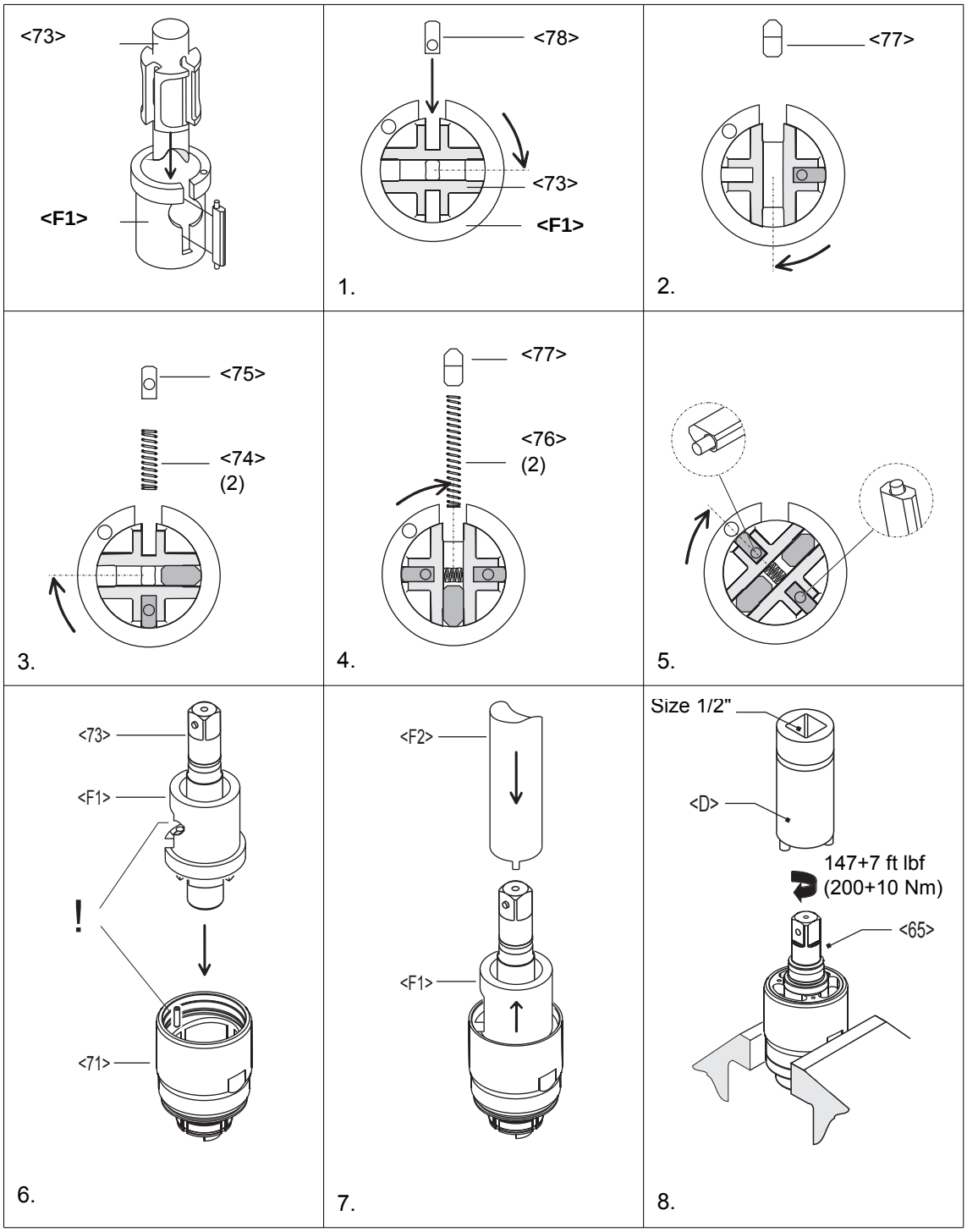
6.

7.5 Assembling the pulse unit

NOTE

To prevent damage, lubricate the gaskets and o-rings using grease (order no. 914392) before assembly.

7.5.1 Assembling the hydraulic blades



8 Spare parts

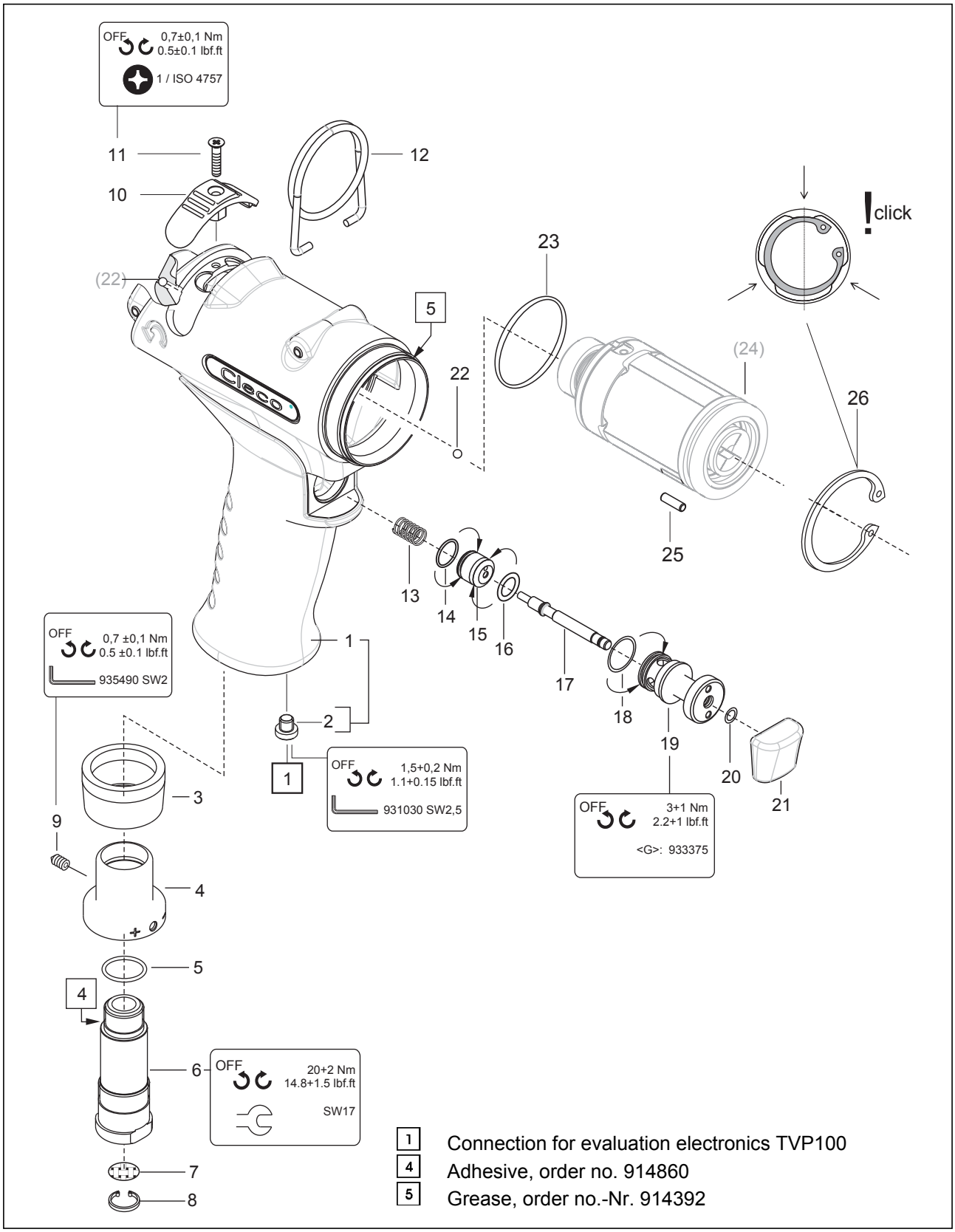
Note

Always use only original Cleco replacement parts. Failure to comply with this instruction can result in decreased performance and an increased need for maintenance. Installing replacement parts from other manufacturers will void all manufacturer's warranties.

We would be glad to prepare a special quote for you for spare and wear parts. Please provide us with the following information:

- Tool model
- Number of tools
- Number of rundowns per day or per shift
- Shut-off torque
- Fastening time per rundown

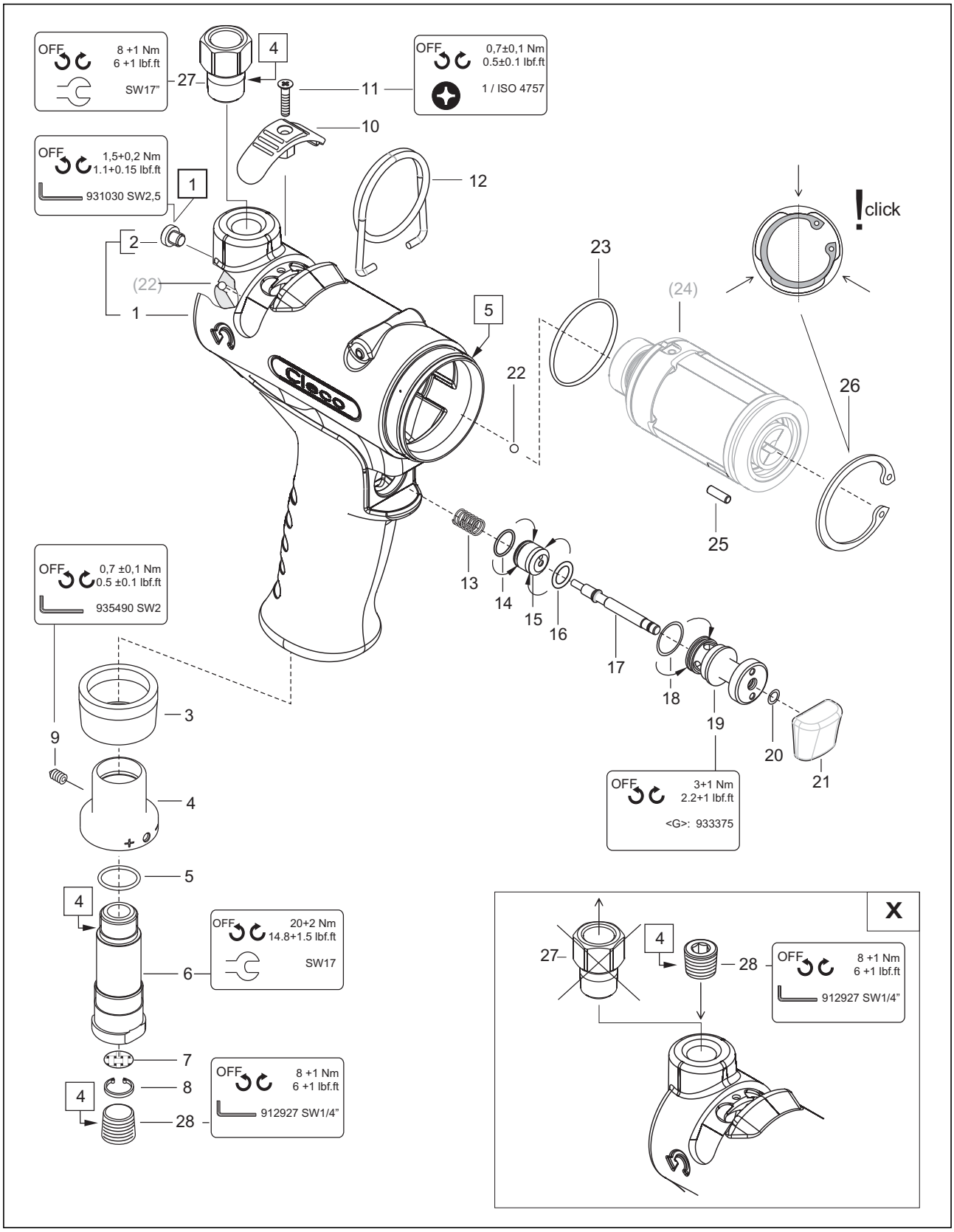
8.1 Pistol grip 120PTHD…



Index	1)	2)	3)	Description	4)
1	935602	1		pistol grip housing asm.	
2	934917	1		pipe plug	M 5X5
3	935720	1	K1	muffler	
4	935434	1		exhaust air throttle	
5	922660	1	K1	o-ring	16,X1,5
6	935437	1		air inlet	
7	905031	1	K1	screen	
8	905599	1	K1	retaining ring	11,X1, IR
9	S905998	1	K1	set bolt	M 4X4
10	935613	1		reverse button	
11	931792	1		countersunk screw	M 3X 14
12	935442	1		suspension bail	
13	935482	1	K1	compression spring	0,5 X 6, X 23,8
14	539188	1	K1	o-ring	9,X1,
15	935441	1		piston	
16	504970	1	K1	o-ring	7,65X1,78
17	935440	1		control push rod	
18	912150	1	K1	o-ring	12,X1,
19	935439	1		plug	
20	905086	1	K1	o-ring	4,X1,
21	935446	1		push-button	
22	911315	1	K1	ball	3,000MM
23	903764	1	K1	o-ring	41,X2,
24	935657	1		motor unit	
25	916772	1	K1	needle roller	3,X9,8
26	935645	1	K1	retaining ring	46,X1,75IR

1)Order no.
2)Quantity
3)Part of motor service kit K1, order no. 935653
4)Dimesions

8.2 Pistol grip 120PTHDA…

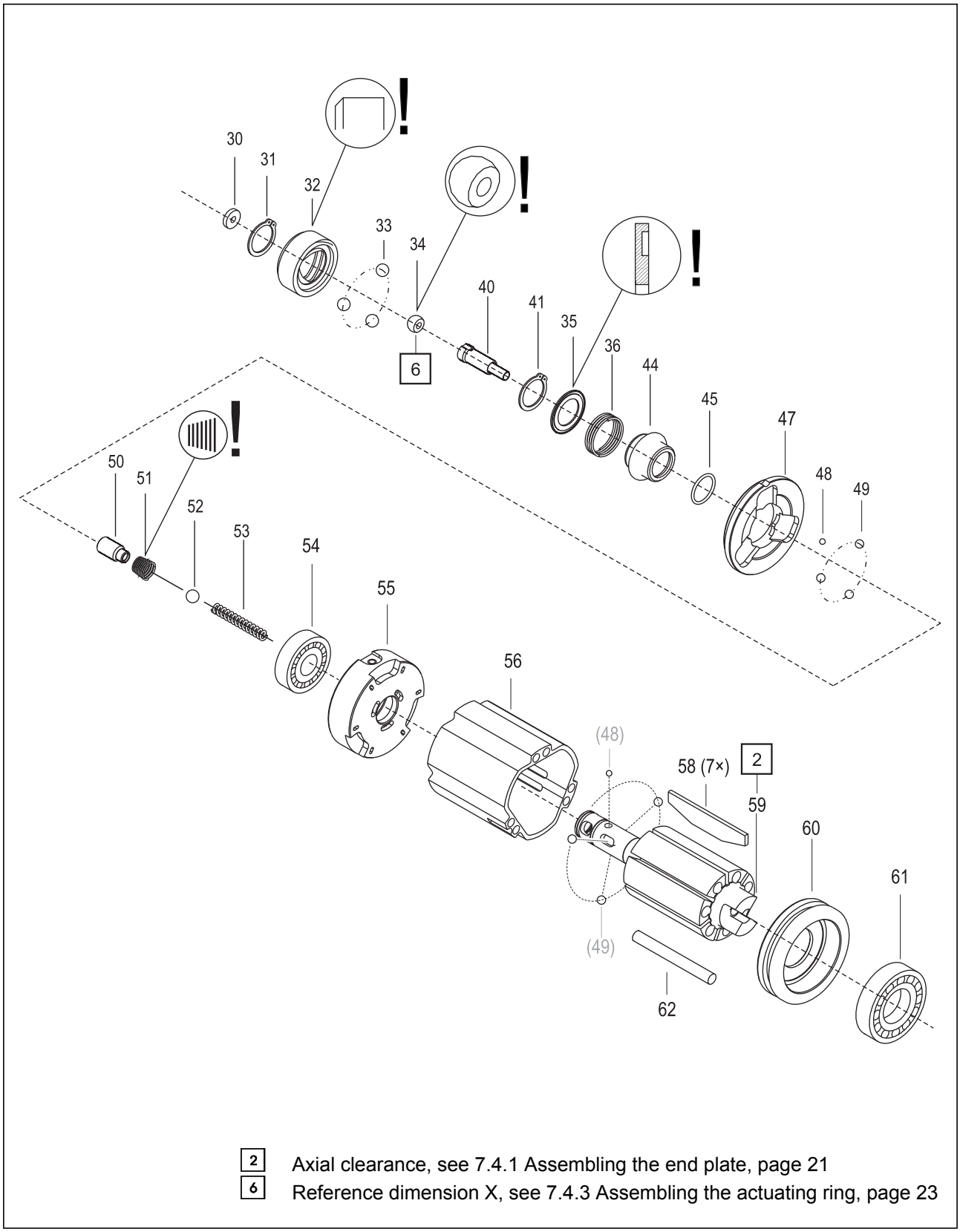

OFF 8 +1 Nm 6 +1 lbf.ft SW17"
OFF 0,7±0,1 Nm 0.5±0.1 lbf.ft 1 / ISO 4757
OFF 1,5+0,2 Nm 1.1+0.15 lbf.ft 931030 SW2,5
OFF 0,7 ±0,1 Nm 0.5 ±0.1 lbf.ft 935490 SW2
OFF 3+1 Nm 2.2+1 lbf.ft <G>: 933375
OFF 20+2 Nm 14.8+1.5 lbf.ft SW17
OFF 8 +1 Nm 6 +1 lbf.ft 912927 SW1/4"
OFF 8 +1 Nm 6 +1 lbf.ft 912927 SW1/4"
click
X
Cleco

Index	1)	2)	3)	Description	4)
1	935636	1		pistol grip housing asm.	
2	934917	1		pipe plug	M 5X5
3	935720	1	K1	muffler	
4	935434	1		exhaust air throttle	
5	922660	1	K1	o-ring	16,X1,5
6	935437	1		air inlet	
7	905031	1	K1	screen	
8	905599	1	K1	retaining ring	11,X1, IR
9	S905998	1	K1	set bolt	M 4X4
10	935613	1		reverse button	
11	931792	1		countersunk screw	M 3X 14
12	935442	1		suspension bail	
13	935482	1	K1	compression spring	0,5 X 6,X 23,8
14	539188	1	K1	o-ring	9,X1,
15	935441	1		piston	
16	504970	1	K1	o-ring	7,65X1,78
17	935440	1		control push rod	
18	912150	1	K1	o-ring	12,X1,
19	935439	1		plug	
20	905086	1	K1	o-ring	4,X1,
21	935446	1		push-button	
22	911315	1	K1	ball	3,000MM
23	903764	1	K1	o-ring	41,X2,
24	935657	1		motor unit	
25	916772	1	K1	needle roller	3,X9,8
26	935645	1	K1	retaining ring	46,X1,75IR
27	935727	1		air strainer	
28	931771	1		screwed plug	1/4 NPT

1)Order no.
2)Quantity
3)Part of motor service kit K1, order no. 935653
4)Dimesions

1	Connection for evaluation electronics TVP100
4	Adhesive, order no. 914860
5	Grease, order no.-Nr. 914392

8.3 Motor unit 935657



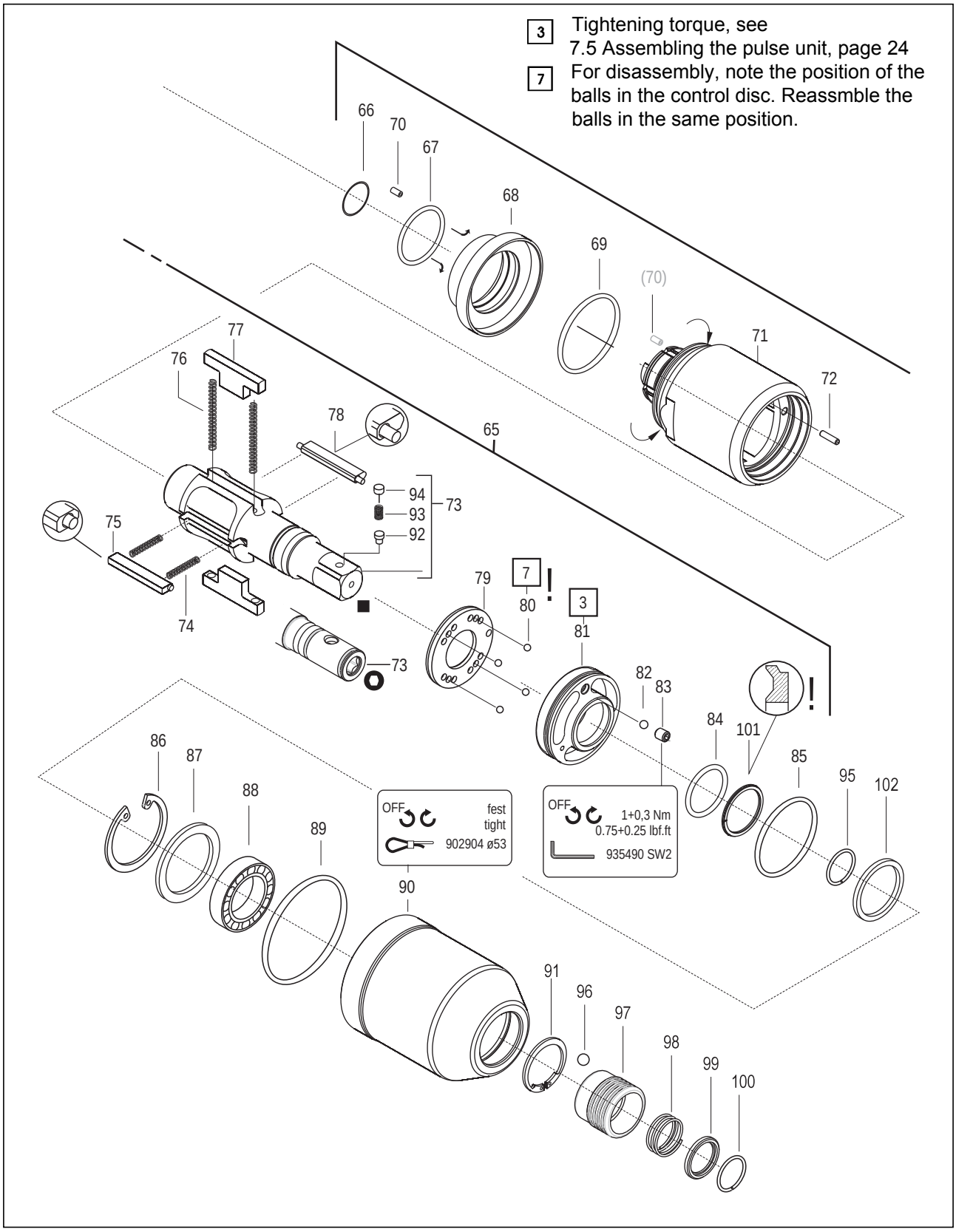
2 Axial clearance, see 7.4.1 Assembling the end plate, page 21

6 Reference dimension X, see 7.4.3 Assembling the actuating ring, page 23

Index	1)	2)	3)	Description	4)
30	935479	1	K1	washer	7,1 X 2,4 X 1,5
31	902862	1	K1	retaining ring	10,X1, AR
32	935443	1		actuating ring	
33	935405	3	K1	ball	4,76MM (3/16")
34	935463	1	K1	ball sleeve 3,8	Ø6 × 3,8MM
	935464	1	K1	ball sleeve 3,5	Ø6 × 3,5MM
	935465	1	K1	ball sleeve 3,2	Ø6 × 3,2MM
35	935404	1	K1	washer	
36	935451	1	K1	compression spring	0,7 X 14,5 X 17,
40	935491	1		torque adjustment screw asm.	
41	902862	1	K1	retaining ring	10,X1, AR
44	935431	1		shut-off piston	
45	926570	1	K1	o-ring	10,X1,
47	935614	1		air distributor	
48	917793	1	K1	ball	2,500MM
49	911315	3	K1	ball	3,000MM
50	935444	1		sleeve	
51	935450	1	K1	compression spring	0,53X 5,27 X 13,5
52	917794	1	K1	ball	4,500MM
53	935449	1	K1	compression spring	0,85X 3,5X 25,7
54	926565	1	K1	ball bearing	10,X 22,X 6,
55	935611	1		rotor cover	
56	935609	1		rotor cylinder	
57	916772	1		needle roller	3,X9,8
58	935623	7	K1	blade	L40,01 D1,7 H 9,5
59	935606	1		rotor	
60	935621	1		rotor cover	
61	915832	1	K1	ball bearing	17,X 30,X 7,
62	935722	7		plug	

1)Order no.
2)Quantity
3)Part of motor service kit K1, order no. 935653
4)Dimesions

8.4 Pulse unit



Index	1)	2)	3)	Description	4)
65	*	1		pulse unit	
66	921623	1	K2	o-ring	22 × 1,5
67	922645	1	K2	o-ring	28 X1,5
68	935622	1		equalizing piston	
69	916809	1	K2	o-ring	40,X1,5
70	935652	1	K2	sleeve	
71	935962	1		hydraulic cylinder asm.	
72	916772	1		needle roller	3, X9,8
73	*	1		hydraulic rotor asm.	
74	935631	2	K2	compression spring	0,36 X 2,5 X 26,2
75	935916	1		control blade asm.	
76	935726	2	K2	compression spring	0,45 X 2,8 X 48,6
77	935915	2		hydraulic blade	
78	935918	1		control blade asm.	
79	935612	1		control disc	
80	917793	8	K2	ball	2,500MM
81	935608	1		bearing ring	
82	911315	1	K2	ball	3,000MM
83	919140	1	K2	set bolt	M4X5
84	S909126	1	K2	o-ring	20,X2,
85	935646	1	K2	o-ring	38,X1,5
86	902106	1	K2	retaining ring	33,X1,2IR
87	935633	1		washer	25,0 X 31,8 X 1,0
88	921414	1	K2	ball bearing	20, X 32, X 7
89	935647	1	K2	o-ring	52,X1,5
90	935620	1		housing	
91	933818	1	K2	retaining ring	20,X1,2 AR
92	914433	1		plug	
93	9D6481	1		compression spring	0,3 X 3,2 X 9,2
94	26989	1		pin	
95	935651	1	K2	retaining ring	18, X1,2 AR
96	*	1	K2	ball	6,000
97	*	1		sleeve	
98	*	1	K2	compression spring	1,2 X 22, X 33,4
99	*	1		ring	
100	*	1	K2	retaining ring	18, X1,2 AR
101	935725	1	K2	supporting ring	
102	935644	1		ring	

1)Order no.
2)Quantity
3)Part of hydraulic service kit K2, order no. 935654
4)Dimesions
*

Order no.		<65>	<73>	<96>	<97>	<98>	<99>	<100>
120PTHD554	■	935643	935910	–	–	–	–	–
120PTHDA554								
110PTHD55Q	O	935642	935963	903231	935634	935648	935649	935651
110PTHDA55Q								

8.5 Equipment order list

Index		1)	Description
A		928478	Oil filling device
	A1	928483	Oil filling unit
	A2	935718	Joining piece cpl.
B		925730	Syringe
C		938538	Assembly/Disassembly motor unit
	C1	933486	Support
	C2	933483	Semi-monocoque pair
	C3	933480	Punch
	C4	933472	Support 0 mm
	C5	933473	Support 0,02 mm
	C6	933474	Support 0,04 mm
	C7	933475	Support 0,06 mm
	C8	933489	Punch
	C9	933476	Support
D		938504	Assembly/Disassembly pulse unit
E		933498	Assembly actuating ring
F		938553	Assembly hydraulic blade/control blade
	F1	938534	sleeve 120PTHD
	F2	938532	awl
G		933375	key for trigger valve

1)Order no.

9 Technical data

9.1 Dimensions 120PTHD… in mm

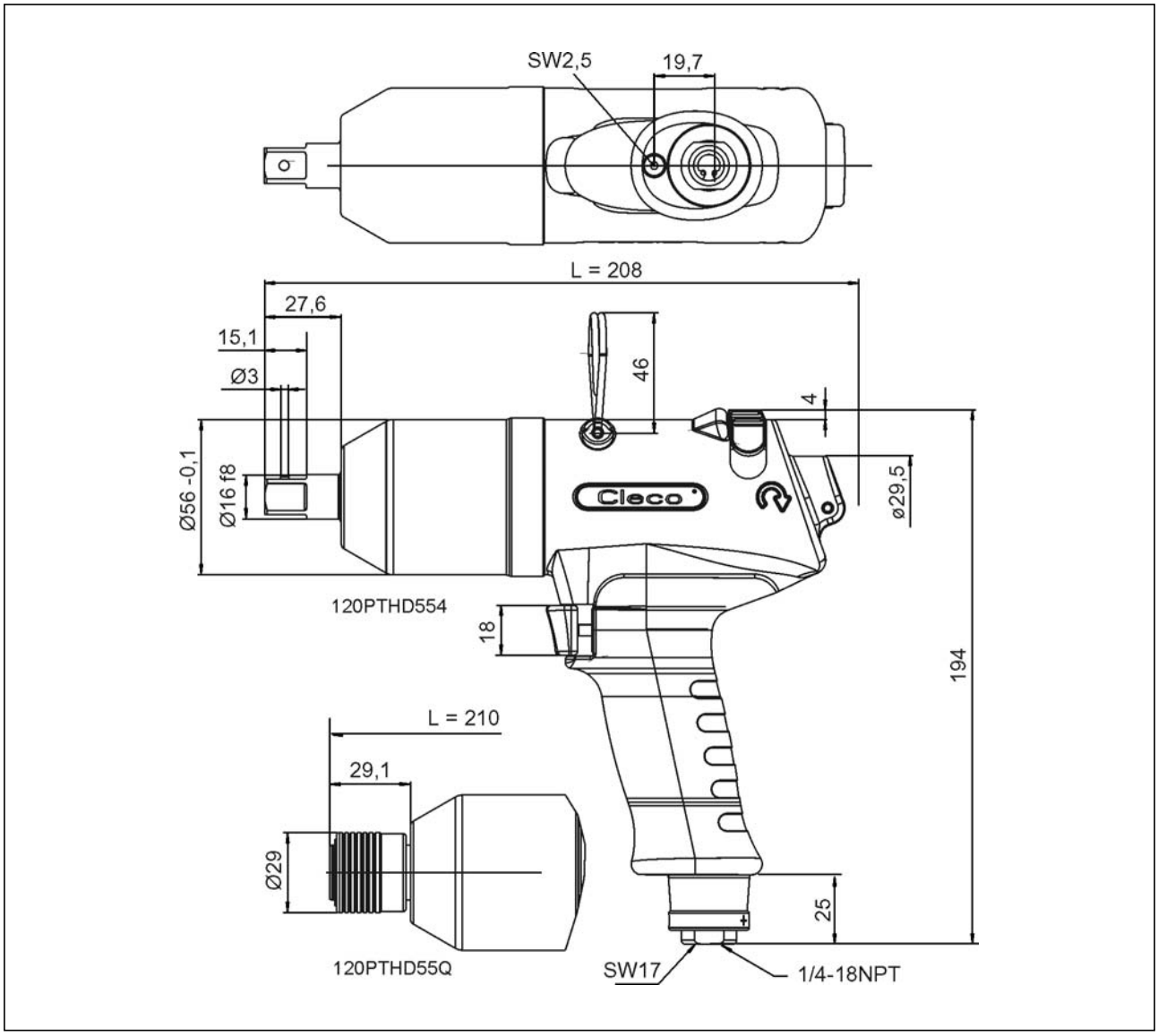


Fig. 9-1

9.2 Dimensions 120PTHDA… in mm

Order no.	B
120PTHDA554	209
110PTHDA55Q	211

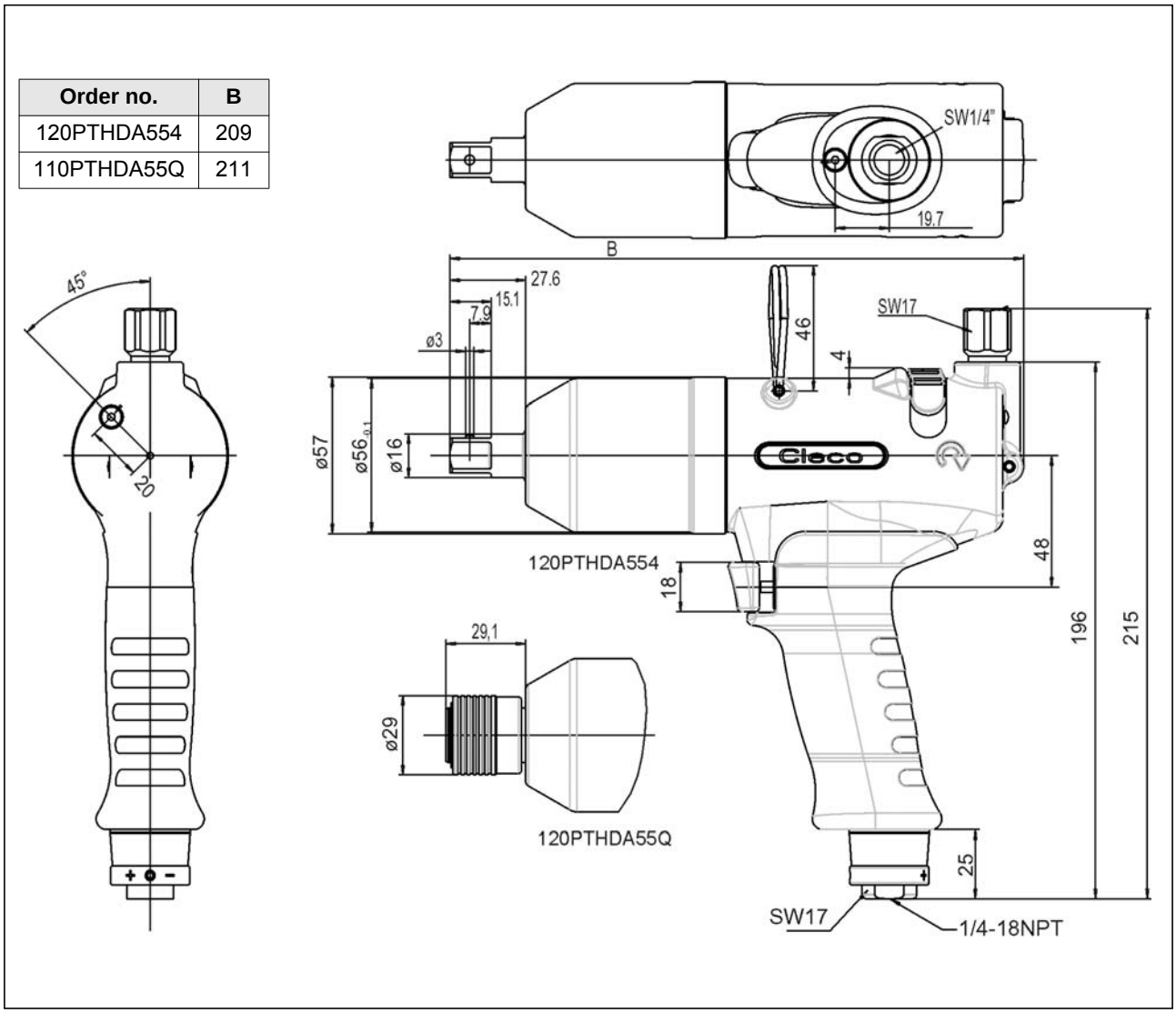


Fig. 9-2

9.3 Performance Data

Order no.		Recommended torque range ft.lbf (Nm)		Free speed	10.9		Air consumption ft³/min (m³/min)	
		min.	max.	rpm	mm	lb (kg)	Free speed	Pulses
120PTHD554	■1/2"	55 (75)	89 (120)	5500	M12	3.7 (1,70)	30 (0,85)	23 (0,65)
120PTHDA554						3.9 (1,75)		
110PTHD55Q	O 7/16"		81 (110)			3.7 (1,70)		
110PTHDA55Q						3.9 (1,75)		

10 Service

NOTE

If repair is required send the complete 120PTHD… to Cleco. It may be repaired only by authorized technicians. If the tool is opened, the warranty is voided.

11 Disposal

CAUTION!

Injuries and environmental damage from improper disposal.
The components and auxiliary materials of a machine incorporate risks to health and the environment.

- ➔ Catch auxiliary materials (oils, greases) when drained and dispose of them properly.
- ➔ Separate the machine parts by material and dispose of them properly.
- ➔ Separate the components of the packing and dispose of them by segregating them clearly.
- ➔ Wear suitable protective clothing at the time of disposal.
- ➔ Follow the general prevailing disposal guidelines.
- ➔ Follow the locally applicable regulations.

Sales & Service Centers

Note: All locations may not service all products. Please contact the nearest Sales & Service Center for the appropriate facility to handle your service requirements.

Dallas, TX
Apex Tool Group
Sales & Service Center
1470 Post & Paddock
Grand Prairie, TX 75050
USA
Phone: +1-972-641-9563
Fax: +1-972-641-9674

Detroit, MI
Apex Tool Group
Sales & Service Center
2630 Superior Court
Auburn Hills, MI 48326
USA
Phone: +1-248-391-3700
Fax: +1-248-391-7824

Houston, TX
Apex Tool Group
Sales & Service Center
6550 West Sam Houston
Parkway North, Suite 200
Houston, TX 77041
USA
Phone: +1-713-849-2364
Fax: +1-713-849-2047

Lexington, SC
Apex Tool Group
670 Industrial Drive
Lexington, SC 29072
USA
Phone: +1-800-845-5629
Phone: +1-803-359-1200
Fax: +1-803-358-7681

Los Angeles, CA
Apex Tool Group
Sales & Service Center
15503 Blackburn Avenue
Norwalk, CA 90650
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Fax: +1-562-802-1718

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Redmond, WA 98052
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Fax: +1-425-497-0496

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3990 East Market Street
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Fax: +1-717-757-5063

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GmbH & Co. OHG
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Fax: +44-182 7874128

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Zone Industrielle
BP 28
25 Avenue Maurice Chevalier
77831 Ozoir-la-Ferrière Cedex
France
Phone: +33-1-64432200
Fax: +33-1-64401717

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Apex Power Tools Trading (Shanghai) Co., Ltd
A company of
Apex Tool Group, LLC
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China 201201
Phone: +86-21-60880320
Fax: +86-21-60880298

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Cooper Tools
de México S.A. de C.V.
a company of
Apex Tool Group, LLC
Vialidad El Pueblito #103
Parque Industrial Querétaro
Querétaro, QRO 76220
Phone: +52 (442) 211-3800
Fax: +52 (442) 103-0443

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Apex Tool Group, LLC
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Zona Industrial - Iporanga
18087-170 Sorocaba, SP Brazil
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